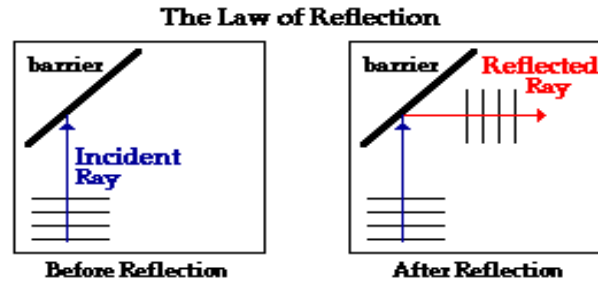


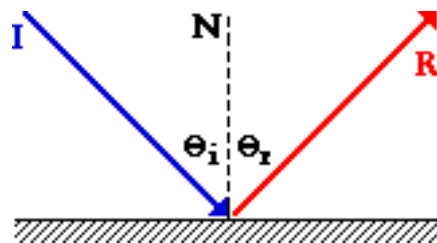
## Wave Sheet Four

### Reflection

– Reflection is the term used to describe what happens when a wave arrives at a barrier and changes direction.



- For reflection of waves from a barrier the angle of reflection,  $\theta_r$  is always equal to the angle of incidence,  $\theta_i$ .

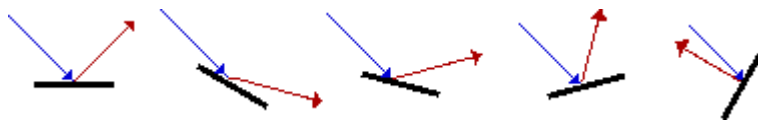


Reflection of Light

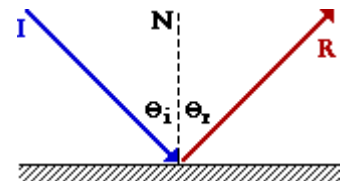
We see object either because they emit light (luminous) or reflect light (nonluminous or illuminated). There are two forms of reflection Diffuse and Regular (specular).



### Regular Reflection

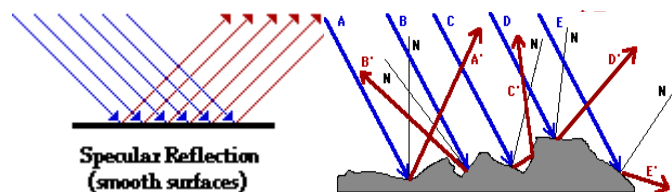


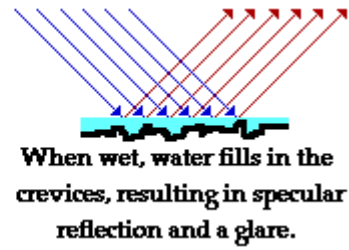
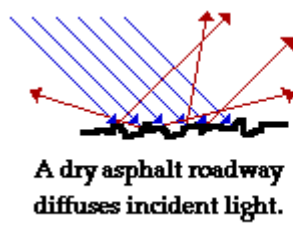
Reflection off of smooth surfaces such as mirrors or a calm body of water leads to a type of reflection known as **specular reflection**



### Diffuse Reflection

Reflection off of rough surfaces such as clothing, paper, and the asphalt roadway leads to a type of reflection known as diffuse reflection. The law of reflection  $\theta_i = \theta_r$  still holds for each individual ray follows the law of reflection. Whether the surface is microscopically rough or smooth has a





## Nature of Images

An image is either **Inverted** or **Upright**, this describes the orientation of the image with respect to the object the image is formed from.



Object



Upright or Erect image



Inverted image

An object can be **Magnified** or **Diminished**, sometimes the image can also be the same size as the object.



Object



Magnified or Enlarged image



Diminished image

An image can also be Real or Virtual.